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Abstract of the Disclosure

An apparatus for measuring a medical substance where a prism having a high refractive index, a thin metal film formed on one of the surfaces of the prism, a light source 10 for making a light incident upon the thin metal film, and a detector for detecting an incident angle of a light being made incident upon a film on which a plasmon resonance phenomenon is generated on the thin metal film are provided. The medical substance, i.e. antigen as an object to be measured, is fixed to the surface of the thin metal film, and the condition for generating the plasmon resonance phenomenon is varied when a mixture of antibody which 15 is coupled with the medical substance in a specific manner and a sample is made contact with a surface of the thin metal film; and the amount of the medical substance can be detected by recognizing the change with a high sensitivity.